

Requested Patent: EP0626924B1

Title:

NEEDLE ASSEMBLY HOLDER WITH ROTATABLE SAFETY SHEATH MEMBER
AND METHOD OF EFFECTING PROPER ALIGNMENT OF A CANNULA USING
SUCH NEEDLE ASSEMBLY HOLDER ;

Abstracted Patent: US5277311 ;

Publication Date: 1994-01-11 ;

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Application Number: US19920977715 19921117 ;

Priority Number(s):

US19920977715 19921117; US19910811298 19911220; US19920947841
19920921 ;

IPC Classification: A61M5/32 ; A61M5/00 ; B65D83/10 ;

Equivalents:

AU3327593, CA2123304, DE69225609D, DE69225609T, JP3109831B2,
JP7502440T, WO9312991

ABSTRACT:

The needle assembly holder of the present invention has mounted about its receptacle end a rotatable safety sheath so that irrespective of how the tip of the cannula of the needle assembly is oriented with respect to the holder, the user can nonetheless obtain an unobstructed view of the tip of the cannula by rotating the safety sheath out of her line of sight. Friction drag is provided between the receptacle end of the needle assembly holder and the safety sheath so that the safety sheath would not freely rotate about the needle assembly holder absent a rotation force applied thereagainst.

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 0 626 924 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention
of the grant of the patent:
20.05.1998 Bulletin 1998/21

(51) Int. Cl.⁶: **B65D 83/10**, A61M 5/32,
A61B 5/14

(21) Application number: **93901170.6**

(86) International application number:
PCT/US92/10969

(22) Date of filing: **17.12.1992**

(87) International publication number:
WO 93/12991 (08.07.1993 Gazette 1993/16)

(54) NEEDLE ASSEMBLY HOLDER WITH ROTATABLE SAFETY SHEATH MEMBER

KANÜLEN-HALTERUNG MIT DREHBARER SCHUTZHÜLLE

SUPPORT D'ENSEMBLE AIGUILLE, A GAINÉ DE SÉCURITÉ ROTATIVE

(84) Designated Contracting States:
DE DK ES FR GB GR IE IT NL SE

(30) Priority: **20.12.1991 US 811298**
21.09.1992 US 947841
17.11.1992 US 977715

(43) Date of publication of application:
07.12.1994 Bulletin 1994/49

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Description

This invention relates to safety devices of the kind defined in the first part of claim 1 including a holder having a hollow main body section and a receptacle end extending therefrom, the holder further having an open end through which at least a portion of a container is insertable into the main body section, the receptacle end of the holder being arranged to mate with a needle assembly having first and second ends such that at least a portion of the second end extends into the main body section, the safety device including a housing having a base secured directly on the receptacle end of the holder and an elongated body portion pivotable to a position in substantial alignment along the longitudinal axis of the needle assembly to envelop the first end of the needle assembly, wherein the housing retains the needle assembly with the holder when the body portion encloses the needle assembly.

In particular, the present invention relates to a needle protection device to be used with a fluid holding tube which is adaptable to prevent a user, or a bystander, from being accidentally pricked by the sharp end of a contaminated needle.

In US-A-5139489 there is described a safety device for a double-ended needle assembly holder according to the first part of claim 1, used in conjunction with an evacuated blood collection tube. The safety device has a housing that is pivotable to a position in substantial alignment with the longitudinal axis of the needle such that, once the housing is pivoted to the alignment position, the needle is retained therein so as to preclude the sharp end of the needle from being exposed. The device described in US-A-5139489 works well but for the fact that the user of the device, for example a phlebotomist or a nurse, is oftentimes blocked by the housing from having a clear view of the tip of the needle (cannula). To elaborate, ordinarily a phlebotomist, when obtaining fluid, as for example blood, from a patient, would position the cannula such that its bevel faces up. For this discussion, the bevel of a cannula is understood to be the sharp, butting end of the cannula. The reason that a phlebotomist wants to position the bevel of the cannula to face up is so that he can see the sharp point, rather than the round end, of the cannula so that the cannula can be more easily and accurately inserted into, for example the vein, of a patient. But since the needle assembly is threaded into the safety device described in US5139489 such that it may end up in any orientation, the safety housing attached to the device would sometimes get in the way and prevent the phlebotomist from viewing the true angle of the cannula.

In WO90/01348 there is described a hinged needle guard, which, in one embodiment has a base slidable along the hub of the needle to effect closing of the guard. Since the base is slidably secured its rotation is also allowed. WO 91/09638 describes a guard clipped onto a double-ended needle assembly that is screwed

into a housing. This guard is closed to protect one end of the needle but the guard does not prevent the needle assembly being removed from the housing, thereby leaving one end of the needle exposed.

According to the present invention there is provided a safety device of the above-specified kind, characterised in that the base portion of the housing is rotatably secured to allow rotation of the body portion of the housing about the holder but to prevent longitudinal movement of the base portion relative to the holder.

Specifically, the receptacle end may have at its outer circumference an annular boss, and the base portion may have an internal circumferential groove rotatably mated to at least a portion of the boss. The body portion of the housing preferably comprises a longitudinal sheath having an elongated slot through which the first end of the needle assembly passes when the sheath is pivoted to the alignment position. The body portion is preferably integrally connected to the base portion by a flexible hinge. The needle assembly preferably comprises a hub, the receptacle end of the holder being internally threaded for threaded mating with the hub of the needle assembly. The body portion of the housing may include at least a cap portion, a main portion, and means adapted to the cap portion to secure the tip of the first end of the needle assembly substantially sealingly after the body portion has been pivoted to the alignment position and the cap portion urged toward the main portion. The device may include a collapsible section interposed between and integrally connecting the cap and the main portion, the collapsible section collapsing to cause the sealing means sealingly to secure the tip of the first end of the needle assembly sealingly when the cap and main portions are relatively urged toward each other after the body portion has been pivoted to the alignment position. The safety device may include means for effecting friction contact between the receptacle end and the base portion such that the housing is rotatable about the holder only when a torque force is applied thereagainst relative to the holder. The friction contact means may comprise at least one bump integrated to the outer circumference of the receptacle end of the holder. Alternatively, the friction contact means may comprise at least one fin-like extension integrated to the outer circumference of the receptacle end of the holder or formed at the inner circumference of the base portion.

It is therefore an objective of the present invention to provide a safety needle assembly holder whose protective housing is rotatable away from the line of view of the user so that a cannula can be accurately inserted into a patient.

It is another objective of the present invention to provide a safety needle assembly holder whose rotatable protective housing is adapted to rotate only when a torque force is applied thereagainst.

The above-mentioned objectives and advantages of the present invention will become more apparent and

the invention itself will be best understood by reference to the following description of embodiments of the present invention taken in conjunction with the accompanying drawings, wherein:

- Figure 1 is a side view of an embodiment of the present invention shown in alignment with a double-ended needle assembly and a fluid collection tube;
- Figure 2 is a semi-cutaway side view of the safety device of the present invention;
- Figure 3 is a cutaway front view of the safety device of the present invention;
- Figure 4 is a perspective view of the safety device of the present invention having mated thereto a needle assembly;
- Figure 5 is a semi-cutaway view of another embodiment of the present invention safety device;
- Figure 6 is a cutaway view of a variant of the instant invention in which a bump is provided between the housing and the holder for enhancing the frictional contact therebetween;
- Figure 7 is a cutaway view of yet another variant of the instant invention in which a number of fins are provided on the extension of the holder which coact with the base member of the housing to effect a frictional contact between the housing and the holder;
- Figure 8 is a plan view of the variant holder of the present invention shown in Fig. 7;
- Figure 9A is a side view of the base portion, i.e. the collar, of the protective housing of the present invention that shows yet another variant of the present invention safety device;
- Figure 9B is a plan view of the Fig. 9A base portion;
- Figure 9C is a 90° rotated sectional view of the Fig. 9A base portion; and
- Figure 9D is an enlarged view of circled portion E of Fig. 5B.

DETAILED DESCRIPTION OF THE INVENTION

With reference to Fig. 1, the present invention safety device is shown to have a fluid container holder 2, otherwise known in the industry as a VACUTAINER holder, having a hollow main body section 4 and a receptacle end 6 integrally extending therefrom. An aperture extends from opening 8 of receptacle end 6 to cavity 10 of main body section 4. An opening 12 provides passage from the other end of holder 2 into cavity 10. The inner circumference of receptacle end 6 is threaded, as designated by 14.

For the present invention embodiment, formed around the outer circumference of receptacle end 6 is a circumferential protuberance, or boss, 16 about which a

base or collar 18 of a safety sheath or housing 20 is fitted, via an internal circumferential groove 22 at base 18. Base 18 is substantially formed in the shape of a ring, a non-enclosed ring being shown in Fig. 4, and is hard-pressed onto receptacle end 6 for rotatably mating its internal groove 22 to external boss 16 of receptacle end 6. The respective dimensions of boss 16 and internal groove 22, and receptacle end 6 and base 18, are such that base 18 is held frictionally against receptacle end 6 so that the former is rotatable about the latter only by force. In other words, in order to rotate base 18 about receptacle end 6, a sufficient moment of torque is necessary. Putting it differently, once base 18 has been rotated to a certain orientation about receptacle end 6, it will stay in that orientation until additional torque force is exerted. Variants of the present invention in which additional measures are taken to ensure that housing 20 is not freely rotatable about receptacle end 6 are discussed below with reference to Figs. 6, 7, 8 and 9.

Connected to base 18, via a flexible hinge 24, is housing 20. The construction of housing 20 has been given in detail in the above referenced US-A-5 139 489, as well as U.S. patent No. 4,982,842. Briefly, as shown in Fig. 1, housing 20 has an elongated slot 26 (see Fig. 3) through which a needle or cannula, such as 28 of the double-ended needle assembly 30, can pass when housing 20 is pivoted toward the longitudinal axis of cannula 28 via a force as indicated by directional arrow 32. Integrally formed within housing 20 are locking means such as, for example, hooking means (hooks) 34 and 36. It should be appreciated that there may be only one, or more than the two shown, hooking means integrated to housing 20. The hooking means each have a finger portion that biases against cannula 28 when housing 20 is pivoted to envelop the same, but which would then return to its original position once cannula 28 has passed the same to thereby permanently retain cannula 28 within housing 20. Thus, as discussed in detail in the reference '842 patent, locking means 34 and 36 in essence prevent relative movement between cannula 28 and housing 20, once housing 20 has been pivoted to envelop the same. The pivoting action of housing 20 is made possible by living hinge 24.

In operation, double-ended needle assembly 30 is connected to receptacle end 6 by turning its hub 38 so that it threadingly mates, via its threads 40, with the threaded aperture of receptacle end 6. Needle assembly 30 has, in addition to cannula 28, which is used to puncture, i.e. invasively contact a patient, an opposed cannula 42 surrounded by an elastomeric shroud 44. Once needle assembly 30 is mated with receptacle end 6, cannula 42 and shroud 44 are extended into cavity 10 of holder 2.

To allow a user a clear view of tip 28T so that cannula 28 can be more accurately inserted into the vein of a patient, for the present invention safety device, holder 2 can be reoriented such that bevel 28B is oriented to face up. And if housing 20 obstructs the view of the user

from bevel 28B of cannula 28, it is rotated away by applying a torque force thereagainst so that base 18 rotates about receptacle end 6. Cannula 28 can therefore be clearly observed, as it is being inserted into the patient. Thereafter, a fluid container tube, such as 46, is inserted along longitudinal axis 48 through opening 12 into cavity 10 of holder 2. As tube 46 is pushed thereagainst, shroud 44 is pushed upwards so that the tip of cannula 42 would penetrate through elastomeric gasket 50 to effect fluid communication, via cannulas 28 and 42, between the patient and tube 46.

Once the necessary fluid, as for example blood, is withdrawn, tube 46 is removed from cavity 10. Thereafter, cannula 28 is removed from the patient. To ensure that the thus contaminated cannula 28 is not exposed and that no one is accidentally pricked thereby, by a single-handed operation, as for example pushing the end portion of housing against some immobile object, housing 20 is pivoted toward longitudinal axis 48 to envelop cannula 28. Either one, or both (or more if more than two hooks are integrated to housing 20), of hooks 34 and 36 would securely retain cannula 28 within housing 20. The thus used holder 2, along with the permanently retained needle assembly 30, may be disposed of in a safe manner as a single unit.

Figs. 2 and 3 show with greater detail and clarity tube holder 2 and the interaction thereof with housing 20 via the rotation of base 18 about receptacle end 6. The interaction between internal groove 22 of base 18 and circumferential boss 16 of receptacle end 6 is also more clearly illustrated in Figs. 2 and 3.

Fig. 4 shows a perspective view of the present invention safety device having mated to its receptacle end 6 needle assembly 30. As shown, base 18 of housing 20 is not fully enclosed but rather is opened at one end so that it can be press fitted to receptacle end 6. As should readily be appreciated, base 18 can also be a fully enclosed ring or collar. In any event, base 18 can be formed with the requisite material (for example plastic) and dimension such that once it fittingly mates with receptacle end 6, it cannot be easily removed therefrom. Furthermore, the respective dimensions of base 18 and receptacle end 6, more specifically that of internal groove 22 and external boss 16, are such that the friction existing between the parts prevents base 18 of housing 20 from freely rotating about receptacle end 6. Thus, once housing 20 is moved to a given orientation, it stays in that orientation until it is further moved by a torque movement.

Fig. 5 illustrates a second embodiment of the present invention. Elements that are the same as those of the previously discussed embodiment or perform the same functions are labelled the same. The Fig. 5 embodiment likewise has a base 18 which is rotatable about receptacle end 6 of holder 2, by means of the interaction between respective internal groove 22 and circumferential boss 16. For the Fig. 5 embodiment, however, housing 20 has a collapsible or crushable sec-

tion 60 sandwiched between and integrally connecting a main body section 52 and a cap section 54. Adapted to cap section 54 is an elastomeric material 58 into which the tip of a contaminated cannula would penetrate -- after housing 20 has been pivoted to envelop the cannula so that the same is securely retained by hooking means 34 and 36, and end 56 of housing 20 pushed longitudinally against an immobile object to effect a relative movement urging main body section 52 and cap section 54 toward each other to collapse crushable section 60.

With reference to Fig. 6-9, variants of the present invention in which additional measures are taken to ensure that housing 20 does not rotate freely about receptacle end 6 absent a torque force applied thereagainst are illustrated.

As shown, for the Fig. 6 variant, an obstruction, for example an obstructive bump 70, is integrated to receptacle end 6 to effect friction contact between receptacle end 6 and base 18. For the Fig. 6 variant, it should be appreciated that base 18 of housing 20 may be fully enclosed to form a closed collar inasmuch as it has a somewhat beveled circumferential end portion 72 that allows base 18 to be forcibly fitted onto receptacle end 6 along the longitudinal axis of holder 2. The inner circumference of base 18, at contact point 74, coacts with the lower circumference of boss 16 to prevent base 18 from being separated from receptacle end 6. As shown, bump 70 coacts with an inner circumferential portion 76 of base 18 to thereby effect a more pronounced friction contact, or drag, between base 18 and receptacle end 6. In fact, as exaggeratedly shown in Fig. 6, the interaction between base 18 and bump 70 causes base 18 to tilt somewhat so that additional friction contact is created between base 18 and receptacle end 6 at a location, designated 78, that is opposite to the location of bump 70 at receptacle end 6. For the Fig. 6 variant of the present invention, therefore, given that bump 70 is formed at receptacle end 6, there no longer needs to be precise friction fitting between boss 16 and base 18. In fact, as shown in Fig. 6, the internal groove 22 shown in Figs. 1-5 is no longer needed for base 18. Instead, a much easier manufactured portion 78 is formed at base 18 to ensure that base 18, once forced onto receptacle end 6, will not easily come off due to the interaction between boss 16 of receptacle end 6 and portion 72 of base 18.

Yet another variant of the present invention for ensuring that sufficient friction contact is present between base 18 and receptacle end 6 so that housing 20 would only rotate if a torque force is applied thereagainst relative to holder 2 is shown in Fig. 7. There, instead of bump 70, a number of fin-like extensions 80 (fins) are provided around the lower portion of receptacle end 6 to coact with resistance against portion 72 of base 18 at junction 82. Accordingly, a plurality of friction contact points, corresponding to the number of fins 80 formed about receptacle end 6, are present to therefore

maintain base 18, and housing 20, at a given rotational position, relative to holder 2, once a torque force against housing 20 is removed. And since there are now a plurality of fins 80 evenly spaced about receptacle end 6, base 18 is evenly aligned with receptacle end 6 and the rotation torque required to rotate housing 20 is more consistently applied thereagainst. Of course, it should be appreciated that only one fin 80, instead of bump 70, can also be used.

For the Fig. 7 variant of the present invention, portion 72 of base 18 is molded to have a beveled inner circumference 84, the lower portion of which coacts with fins 80, to provide for an easier mating of base 18 to receptacle end 6. Portion 72 further has at its upper end a circumferential ledge 86, which fittingly coacts with a corresponding circumferential surface 88 of boss 16. The interaction between surfaces 88 and 86 ensures that, once base 18 is inserted to receptacle end 6, it cannot be removed.

Fig. 8 is a plan view of holder 2, without housing 20 and base 18, that shows that the Fig. 7 variant of the present invention has exemplary four fins 80 located 90° apart. Of course, instead of four fins 80 evenly spaced 90° apart about receptacle end 6, other configurations of evenly spaced fins 80, such as three fins 80 spaced 120° apart, would also provide the required frictional drag between base 18 and receptacle end 6.

With reference to Figs. 9A-9D, yet another variant of the present invention is disclosed. As shown, base or collar 18 has integrated to its inner circumference a plurality of fin-like extensions 90 which, as more clearly shown in Fig. 9C, coact with the outer circumference 96 of receptacle end 6 of holder 2 (shown in dotted outline form to illustrate more clearly the fin-like extensions 90). For the variant shown in Figs. 9A-9D, three fin-like extensions 90, evenly spaced at 120° about collar 18, are shown. It should be appreciated that, instead of three, some other multiples of fin-like extensions 90, for example four evenly spaced at 90°, may also be used. Thus, so long as there are a number of evenly spaced finlike extensions 90 in the inner circumference of collar 18 to coact with outer circumference 96 of receptacle end 6, a consistent drag is provided between inner circumference 90 of collar 18 and outer circumference 96 of receptacle end 6 when a torque force is applied against housing 20 to rotate the same relative to holder 2.

With specific reference to Fig. 9A, it should be appreciated that fin-like extension 90, instead of extending continuously from the mouth of collar 18 to section 72 thereof, can actually be comprised of a number of disjointed sections 90a to 90c, for example, each coacting with outer circumference 96 of receptacle end 6 to provide friction contacts between receptacle end and base 18, to thereby effect a consistent friction drag.

Inasmuch as the present invention is subject to many variations, modifications and changes in detail, it is intended that all matter described throughout this

specification and shown in the accompanying drawings be interpreted as illustrative only and not in a limiting sense.

Claims

1. A safety device including a holder (2) having a hollow main body section (4) and a receptacle end (6) extending therefrom, the holder (2) further having an open end (12) through which at least a portion of a container (46) is insertable into the main body section (4), the receptacle end (6) of the holder (2) being arranged to mate with a needle assembly (30) having first and second ends (28T; 42) such that at least a portion of the second end (42) extends into the main body section (4), the safety device including a housing (20) having a base secured directly on the receptacle end (6) of the holder (2) and an elongated body portion pivotable to a position in substantial alignment along the longitudinal axis of the needle assembly (30) to envelop the first end (28T) of the needle assembly (30) wherein the housing (20) retains the needle assembly (30) with the holder (2) when the body portion encloses the needle assembly (30), characterised in that the base portion (18) of the housing (20) is rotatably secured to allow rotation of the body portion of the housing (20) about the holder (2) but to prevent longitudinal movement of the base portion relative to the holder (2).
2. A safety device according to Claim 1, characterised in that the receptacle end (6) has at its outer circumference an annular boss (16), and that an internal circumferential groove (22) on the base portion (18) is rotatably mated to at least a portion of the boss (16).
3. A safety device according to Claim 1 or 2, characterised in that the body portion of the housing (20) comprises a longitudinal sheath having an elongated slot through which the first end of the needle assembly (30) passes when the sheath is pivoted to the alignment position.
4. A safety device according to any one of the preceding claims, characterised in that the body portion is integrally connected to the base portion (18) by a flexible hinge (24).
5. A safety device according to any one of the preceding claims, characterised in that the needle assembly (30) comprises a hub (38), and that the receptacle end (6) of the holder (2) is internally threaded for threadedly mating with the hub of the needle assembly.
6. A safety device according to any one of the preced-

ing claims, characterised in that the body portion of the housing (20) includes at least a cap portion (54), a main portion (52), and means (58) adapted to the cap portion (54) to secure the tip of the first end (28T) of the needle assembly (30) substantially sealingly after the body portion has been pivoted to the alignment position and the cap portion (54) urged toward the main portion.

7. A safety device according to Claim 6, including a collapsible section (60) interposed between and integrally connecting the cap (54) and the main portion (52), characterised in that the collapsible section (60) collapses to cause the sealing means (58) sealingly to secure the tip of the first end (28T) of the needle assembly (30) sealingly when the cap (54) and main portions (52) are relatively urged toward each other after the body portion has been pivoted to the alignment position.
8. A safety device according to any one of the preceding claims, characterised in that the safety device includes means (70, 76, 80) for effecting friction contact between the receptacle end (6) and the base portion (18) such that the housing (20) is rotatable about the holder (2) only when a torque force is applied thereagainst relative to the holder.
9. A safety device according to Claim 8, characterised in that the friction contact means comprises at least one bump (70) integrated to the outer circumference of the receptacle end (6) of the holder (2).
10. A safety device according to Claim 8, characterised in that the friction contact means comprises at least one fin-like extension (80) integrated to the outer circumference of the receptacle end (6) of the holder (2).
11. A safety device according to Claim 8, characterised in that the friction contact means comprises at least one fin-like extension (90) formed at the inner circumference of the base portion (18).

Patentansprüche

1. Sicherheitsvorrichtung mit einem Halter (2) mit einem hohlen Hauptkörperbereich (4) und einem daraus hervorstehenden Aufnahmeende (6), wobei der Halter (2) darüberhinaus ein offenes Ende (12) aufweist, durch welches mindestens ein Teil eines Behälters (46) in den Hauptkörperbereich (4) einführbar ist, wobei das Aufnahmeende (6) des Halters (2) zum Zusammenfügen mit einer Kanülenanordnung (30) mit einem ersten und einem zweiten Ende (28T; 42) ausgelegt ist, wodurch mindestens ein Bereich des zweiten Endes (42) sich in den Hauptkörperbereich (4)

erstreckt, die Sicherheitsvorrichtung ein Gehäuse (20) mit einer Basis aufweist, die unmittelbar an dem Aufnahmeende (6) des Halters (2) befestigt ist und einen länglichen Körperbereich, der in eine Stellung schwenkbar ist, in der er im wesentlichen mit der Längsachse der Kanülenanordnung (30) fluchtet und das erste Ende (28T) der Kanülenanordnung (30) umschließt, wobei das Gehäuse (20) die Kanülenanordnung (30) innerhalb des Halters (2) zurückhält, wenn der Körperbereich die Kanülenanordnung (30) umschließt, **dadurch gekennzeichnet**, daß der Basisbereich (18) des Gehäuses (20) drehbar befestigt ist, um eine Drehung des Körperbereichs des Gehäuses (20) um den Halter zu ermöglichen, jedoch eine Längsbewegung des Basisbereichs relativ zu dem Halter (2) zu verhindern.

2. Sicherheitsvorrichtung nach Anspruch 1, **dadurch gekennzeichnet**, daß das Aufnahmeende (6) an seinem äußeren Umfang eine ringförmige Wulst (16) aufweist und daß eine innere Umfangsnut (22) an dem Basisbereich (18) drehbar mit mindestens einem Teil des Wulstes (16) zusammenpaßt.
3. Sicherheitsvorrichtung nach einem der Ansprüche 1 oder 2, **dadurch gekennzeichnet**, daß der Körperbereich des Gehäuses (20) eine Längshülse mit einem länglichen Schlitz aufweist, durch welchen das erste Ende der Kanülenanordnung (30) tritt, wenn die Hülse in die fluchtende Stellung geschwenkt wird.
4. Sicherheitsvorrichtung nach einem der voranstehenden Ansprüche, **dadurch gekennzeichnet**, daß der Körperbereich über ein flexibles Gelenk (24) einstückig mit dem Basisbereich (18) verbunden ist.
5. Sicherheitsvorrichtung nach einem der voranstehenden Ansprüche, **dadurch gekennzeichnet**, daß die Kanülenanordnung (30) eine Nabe (38) aufweist und daß das Aufnahmeende (6) des Halters (2) ein Innengewinde zum schraubenden Zusammenfügen mit der Nabe der Kanülenanordnung aufweist.
6. Sicherheitsvorrichtung nach einem der voranstehenden Ansprüche, **dadurch gekennzeichnet**, daß der Körperbereich des Gehäuses (20) mindestens einen Kappenbereich (54), einen Hauptbereich (52) und eine am Kappenbereich (54) befindliche Vorrichtung (58) zur im wesentlichen abdichtenden Sicherung der Spitze des ersten Endes (28T) der Kanülenanordnung (30) aufweist nachdem der Körperbereich in die fluchtende Stellung geschwenkt wurde und der Kappenbereich (54) in Richtung des Hauptbereichs gedrückt

wurde.

7. Sicherheitsvorrichtung nach Anspruch 6 mit einem kollabierbaren Teil (60) zwischen der Kappe (54) und dem Hauptbereich (52) und einstückig verbunden, **dadurch gekennzeichnet**, daß der kollabierbare Teil (60) kollabiert, um die Abdichtvorrichtung (58) die Spitze des ersten Endes (28T) der Kanülenanordnung (30) abdichten zu lassen, wenn die Kappe (54) und der Hauptbereich (52) aufeinanderzugeschoben werden, nachdem der Körperbereich in die fluchtende Stellung geschwenkt wurde.
8. Sicherheitsvorrichtung nach einem der voranstehenden Ansprüche, **dadurch gekennzeichnet**, daß die Sicherheitsvorrichtung Mittel (70, 76, 80) zur Ausübung von Reibungskontakt zwischen dem Aufnahmeende (6) und dem Basisbereich (18) aufweist, so daß das Gehäuse (20) nur dann um den Halter (2) drehbar ist, wenn ein Drehmoment relativ zu dem Halter daran anliegt.
9. Sicherheitsvorrichtung nach Anspruch 8, **dadurch gekennzeichnet**, daß die Reibungskontaktvorrichtung mindestens einen Höcker (70) aufweist, der in den äußeren Umfang des Aufnahmeendes (6) des Halters (2) integriert ist.
10. Sicherheitsvorrichtung nach Anspruch 8, **dadurch gekennzeichnet**, daß die Reibungskontaktvorrichtung mindestens eine finnenartige Hervorstehung (18) aufweist, welche in den äußeren Umfang des Aufnahmeendes (6) des Halters (2) integriert ist.
11. Sicherheitsvorrichtung nach Anspruch 8, **dadurch gekennzeichnet**, daß die Reibungskontaktvorrichtung mindestens eine finnenartige Hervorstehung (90) aufweist, welche am inneren Umfang des Basisbereichs (18) angeformt ist.

Revendications

1. Dispositif de sécurité comprenant un support (2) comportant une section corps principal creuse (4) et une extrémité réceptacle (6) s'étendant depuis celle-ci, le support (2) comportant en outre une extrémité ouverte (12) à travers laquelle au moins une partie d'un conteneur (46) peut être insérée dans la section corps principal (4), l'extrémité réceptacle (6) du support (2) étant agencée pour s'ajuster avec un ensemble aiguille (30) comportant une première et une seconde extrémité (28T; 42) de sorte qu'au moins une partie de la seconde extrémité (42) s'étend dans la section corps principal (4), le dispositif de sécurité comprenant un boîtier (20) ayant une base fixée directement sur l'extrémité réceptacle (6) du support (2) et une partie corps allongée pouvant pivoter vers une position

en alignement substantiel le long de l'axe longitudinal de l'ensemble aiguille (30) pour envelopper la première extrémité (28T) de l'ensemble aiguille (30), dans lequel le boîtier (20) retient l'ensemble aiguille (30) avec le support (2), lorsque la partie corps renferme l'ensemble aiguille (30), caractérisé en ce que la partie base (18) du boîtier (20) est fixée de façon rotative pour permettre une rotation de la partie corps du boîtier (20) autour du support (2), mais empêcher un déplacement longitudinal de la partie base par rapport au support (2).

2. Dispositif de sécurité selon la revendication 1, caractérisé en ce que l'extrémité réceptacle (6) comporte sur sa circonférence extérieure une protubérance annulaire (16), et en ce qu'une gorge circonférentielle interne (22) sur la partie base (18) est ajustée de façon rotative sur au moins une partie de la protubérance (16).
3. Dispositif de sécurité selon la revendication 1 ou 2, caractérisé en ce que la partie corps du boîtier (20) comprend une gaine longitudinale comportant une fente allongée à travers laquelle la première extrémité de l'ensemble aiguille (30) pénètre lorsque la gaine est pivotée dans la position d'alignement.
4. Dispositif de sécurité selon l'une quelconque des revendications précédentes, caractérisé en ce que la partie corps est reliée intégralement à la partie base (18) par une charnière flexible (24).
5. Dispositif de sécurité selon l'une quelconque des revendications précédentes, caractérisé en ce que l'ensemble aiguille (30) comprend une embase (38), et en ce que l'extrémité réceptacle (6) du support (2) est filetée intérieurement pour s'ajuster par vissage avec l'embase de l'ensemble aiguille.
6. Dispositif de sécurité selon l'une quelconque des revendications précédentes, caractérisé en ce que la partie corps du boîtier (20) comprend au moins une partie capuchon (54), une partie principale (52), et des moyens (58) adaptés à la partie capuchon (54) pour fixer la pointe de la première extrémité (28T) de l'ensemble aiguille (30) de façon sensiblement scellée après que la partie corps ait été pivotée dans la position d'alignement et la partie capuchon (54) pressée vers la partie principale.
7. Dispositif de sécurité selon la revendication 6, comprenant une section pliable (60) intercalée entre et reliant intégralement le capuchon (54) et la partie principale (52), caractérisé en ce que la section pliable (60) se plie pour que les moyens de scellement (58) fixent de façon scellée la pointe de la première extrémité (28T) de l'ensemble aiguille (30) de façon scellée lorsque la partie capuchon (54) et la

partie principale (52) sont pressées de façon relative l'une contre l'autre après que la partie corps ait été pivotée dans la position d'alignement.

8. Dispositif de sécurité selon l'une quelconque des revendications précédentes, caractérisé en ce que le dispositif de sécurité comprend des moyens (70, 76, 80) pour créer des frottements de contact entre l'extrémité réceptacle (6) et la partie base (18) de sorte que le boîtier (20) peut pivoter autour du support (2) uniquement lorsqu'une force de torsion est appliquée sur celui-ci par rapport au support. 5
10
9. Dispositif de sécurité selon la revendication 8, caractérisé en ce que les moyens de frottements de contact comprennent au moins une surépaisseur (70) solidaire de la circonférence extérieure de l'extrémité réceptacle (6) du support (2), 15
10. Dispositif de sécurité selon la revendication 8, caractérisé en ce que les moyens de frottements de contact comprennent au moins une extension en forme d'ailette (80) solidaire de la circonférence extérieure de l'extrémité réceptacle (6) du support (2). 20
25
11. Dispositif de sécurité selon la revendication 8, caractérisé en ce que les moyens de frottements de contact comprennent au moins une extension en forme d'ailette (90) formée dans la circonférence intérieure de la partie base (18). 30

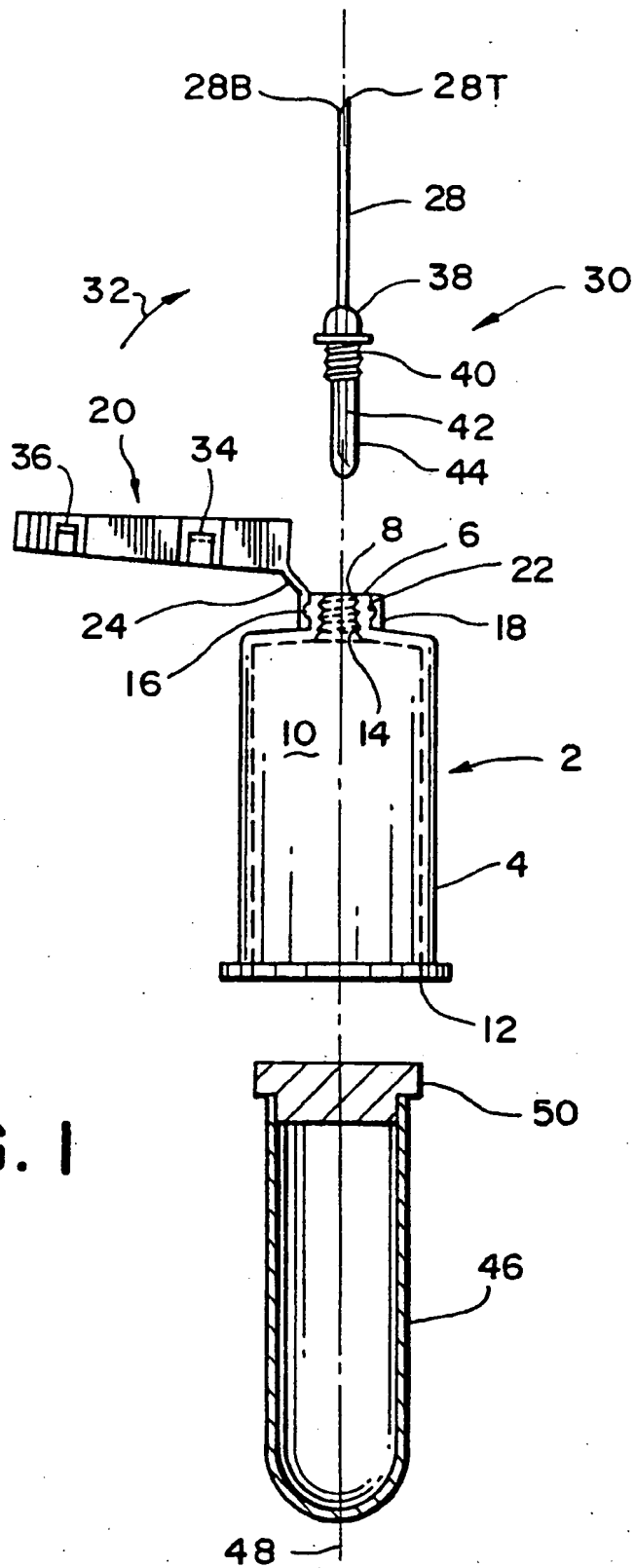
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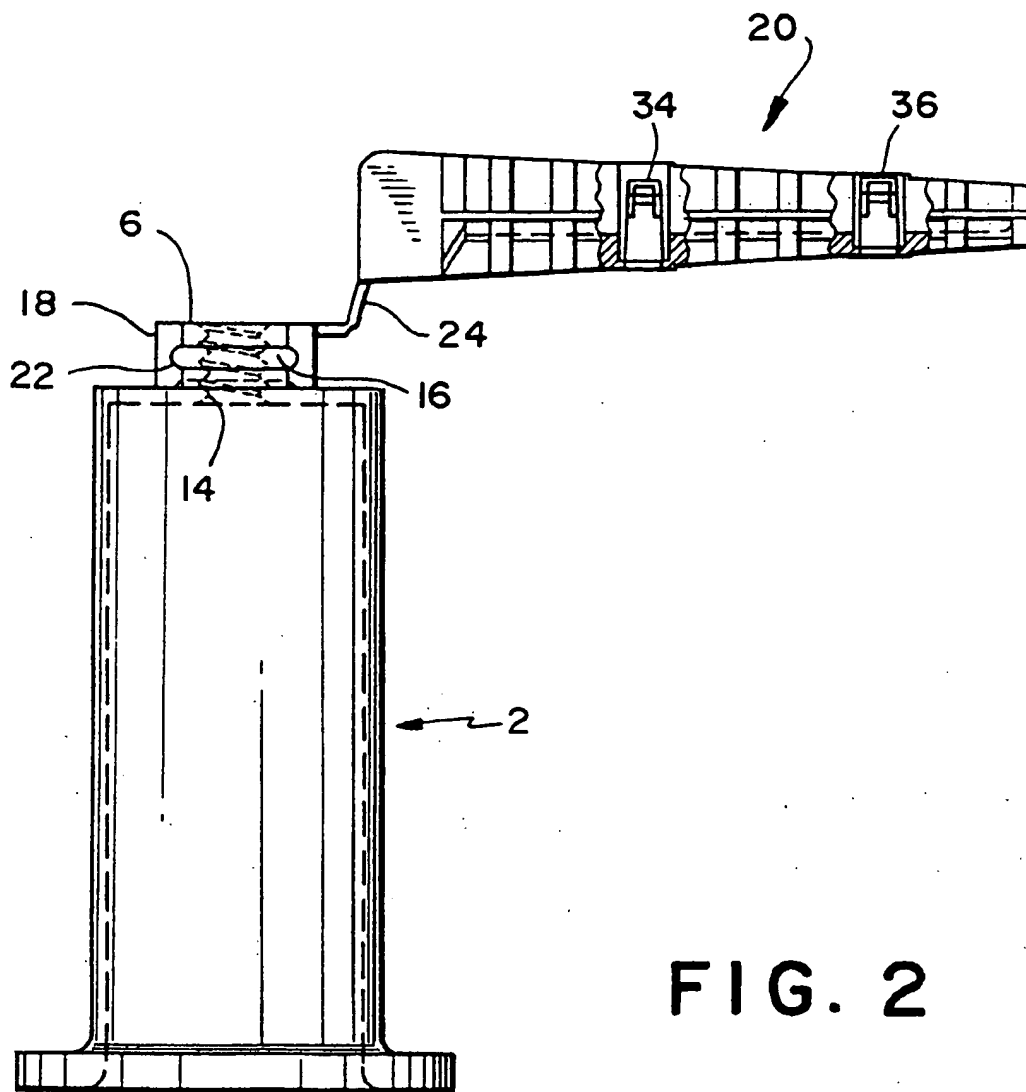
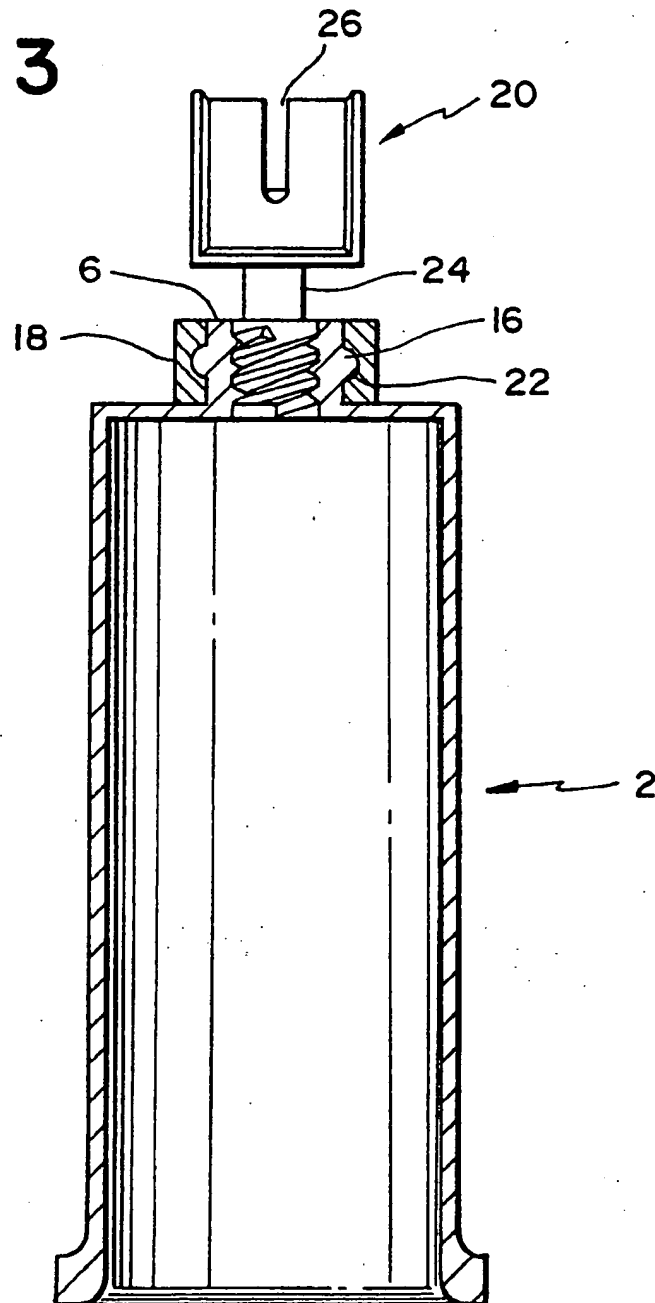


FIG. 3



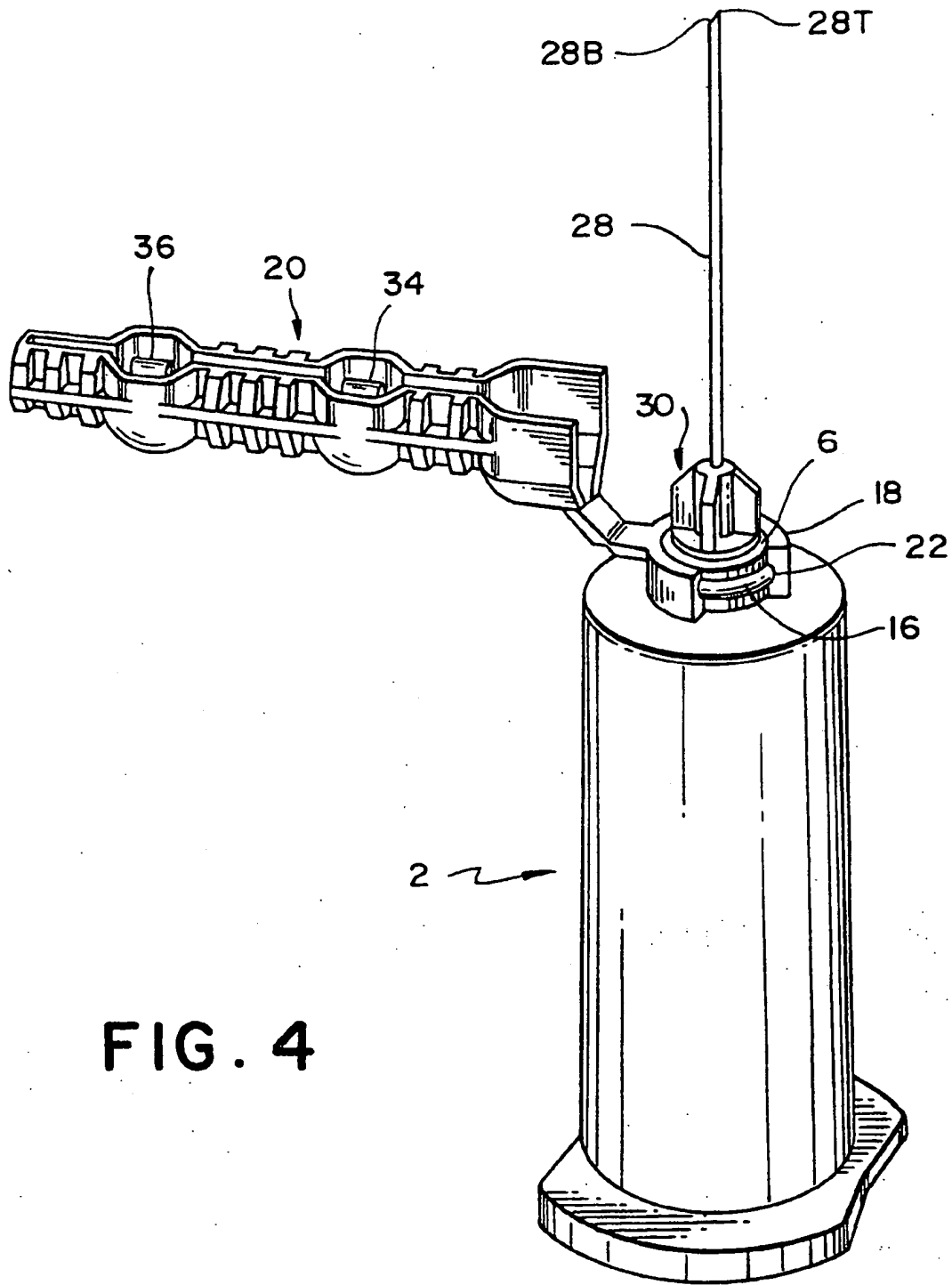


FIG. 4

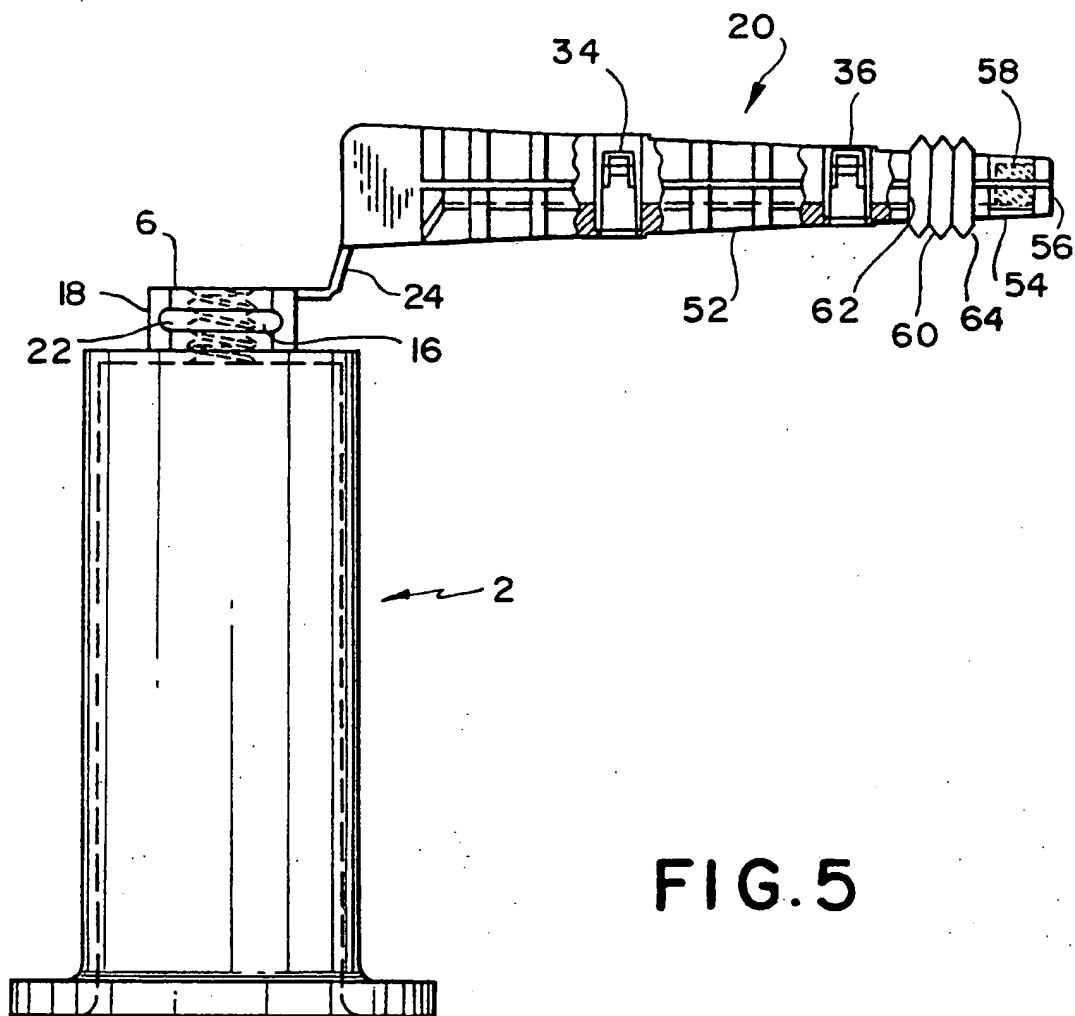


FIG. 5

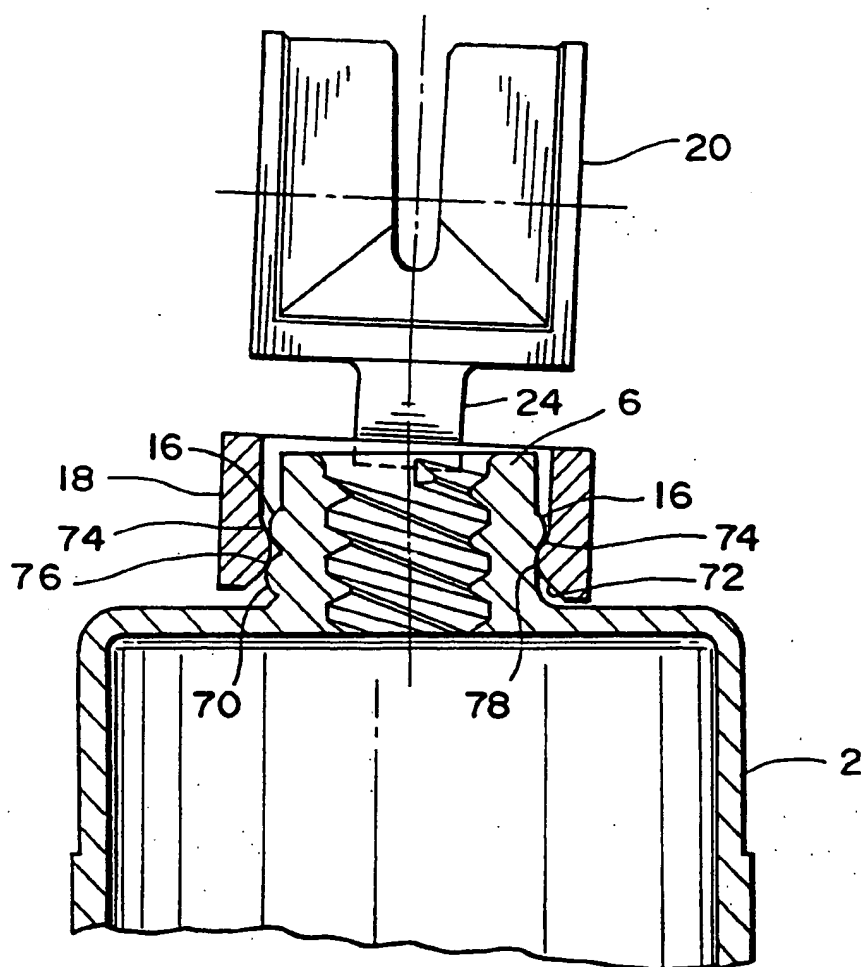


FIG. 6

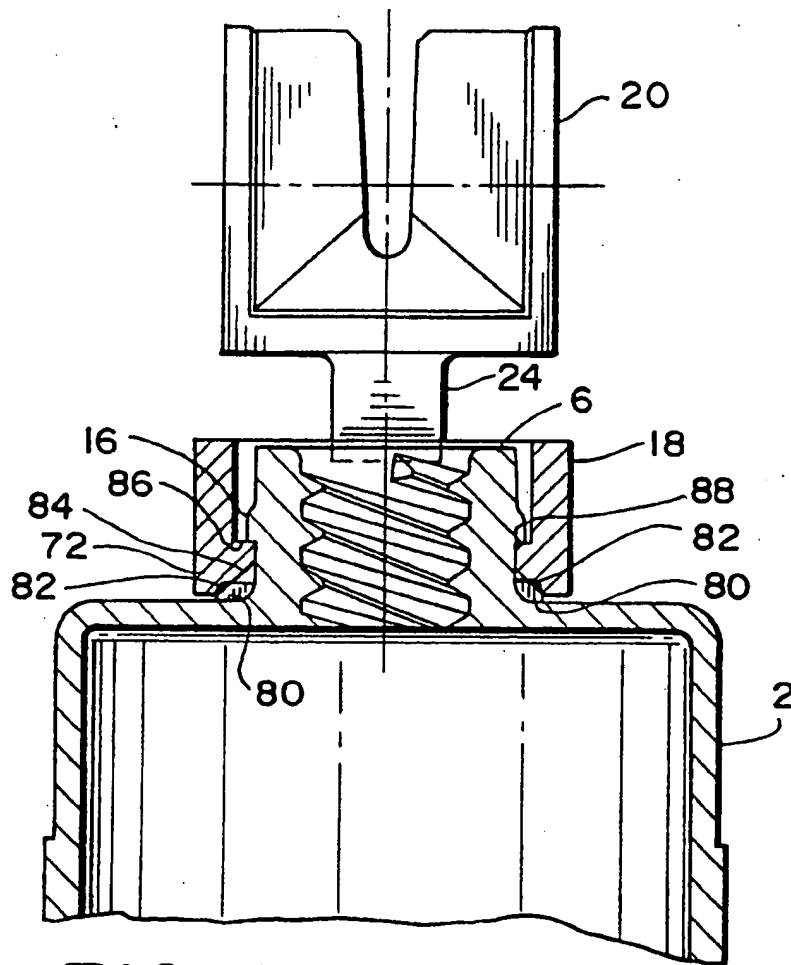


FIG. 7

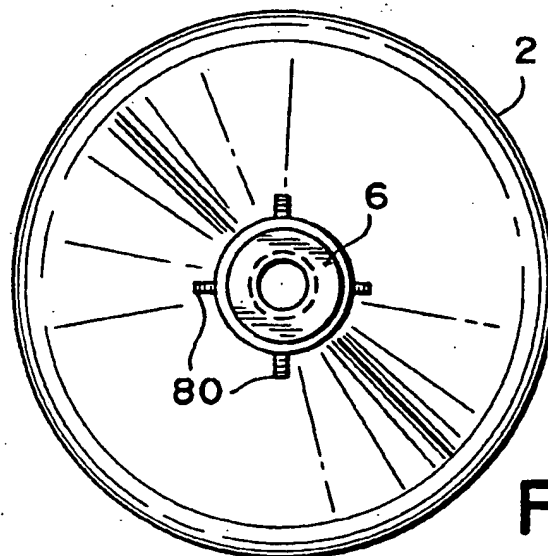


FIG. 8

FIG. 9D

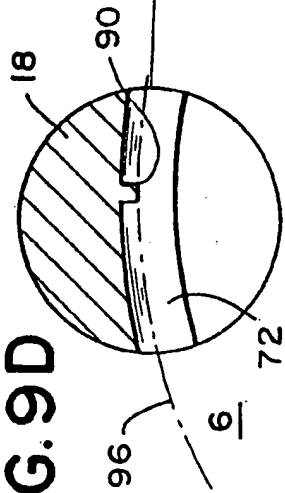


FIG. 9B

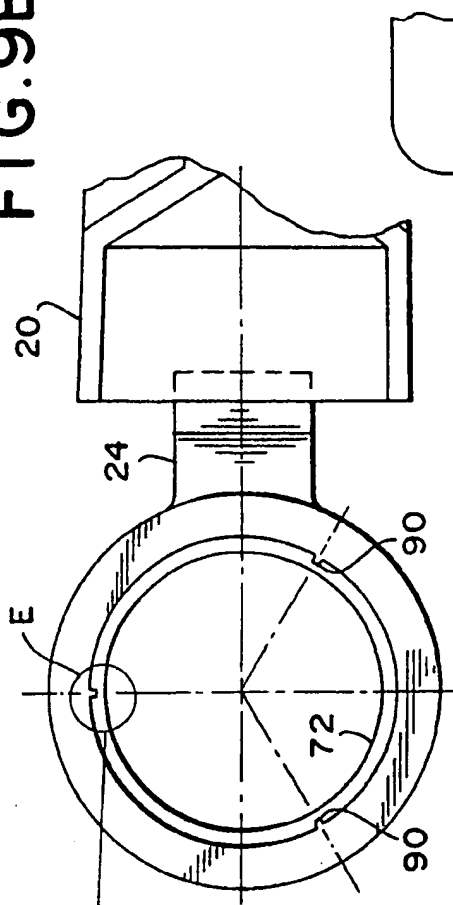


FIG. 9C

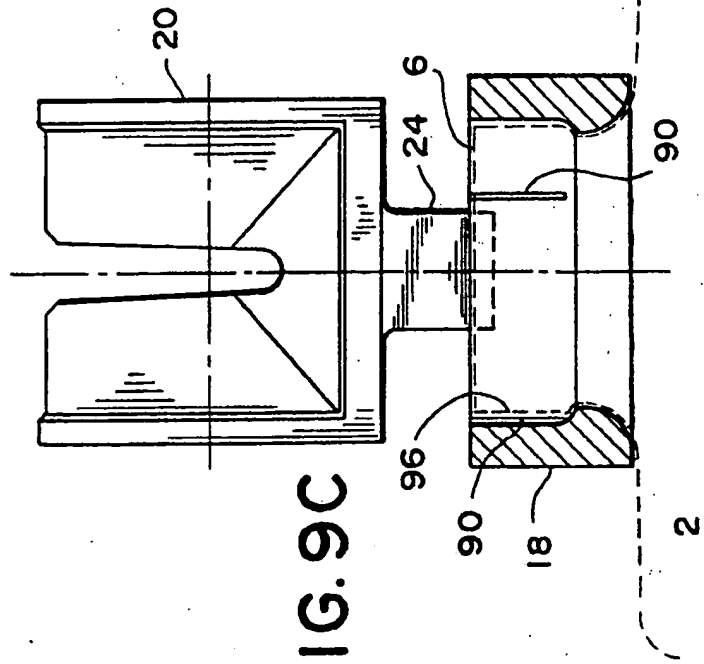


FIG. 9A

